Concept –Matrices

Matrices are arrays used to store data.

$$D = \begin{bmatrix} 173 & 57 & 18 & 86 \\ 179 & 58 & 19 & 82 \\ 167 & 62 & 18 & 96 \\ 195 & 84 & 18 & 71 \\ 173 & 64 & 18 & 90 \\ 184 & 74 & 22 & 78 \\ 175 & 60 & 19 & 88 \\ 140 & 50 & 34 & 70 \end{bmatrix}$$

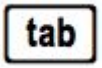
In this topic we always write the number of _____ first then the number of _____

A row matrix _____

A column matrix _____

How to – Make a matrix with CAS

1. On a  _____ page press  to open the templates.

2. Choose the big matrix template  then type in the number of rows and the number of columns. To quickly type it in press  between each element.

3. To save the matrix so you don't have to type it in every time press _____ →_____

Examples:

A survey of primary and secondary students asked students to compare the number of friends they have in real life to those of social media. The results are in the table below. Represent this information in a matrix labelled A.

Attitude	Primary	Secondary
Fewer	5	2
Same	29	9
More	33	36

A =

What is the order of this matrix? _____

What is element a_{32}, and what does this represent from the table? _____

What was the total number of Primary students? _____

Concept –Matrices and Networks

Recall that matrices can be used to represent networks.
For example:
The network diagram drawn shows the ways to travel between three towns, A,B and C.

a. Use a matrix to represent the connections. Each element should describe the number of ways to travel directly from one town to another.

b. What information is given by the sum of the second column of the matrix?

Worked Examples

Draw a matrix, labelled X, with at least 5 columns and 4 rows. Write the order of your matrix and clearly identify element x_{32}.